

Patent claims

- 5 1. Distance meter, in particular for telescope
arrangements in earth- or space-supported
applications for the measurement of surfaces,
comprising at least
- 10 • a radiation source for the emission of
electromagnetic radiation (ES), in
particular of laser light, to a target to
be surveyed,
 - 15 • a receiver unit having a sensor (11) for
receiving radiation (S) reflected by the
target and for deriving distance
information from the received radiation
by the pulse transit time or phase
measurement method,
 - 20 • at least one spatial filter component (6,
6'), the spatial filter component (6, 6')
being formed and arranged so that the
angular range of reception of the
reflected radiation (S) is limited,
characterized by a first spectral filter component
25 (4) located upstream of the spatial filter
component in the receiving direction and
reflecting in the infrared range.
- 30 2. Distance meter according to Claim 1, characterized
in that the spatial filter component (6, 6') is in
the form of an optical fibre (6), in particular
having a microlens (5) located upstream in the
receiving direction.

3. Distance meter according to either of the preceding Claims, characterized in that the spatial filter component (6') is a fibre laser having a multimodal sheath and an active fibre core (6a).
4. Distance meter according to Claim 3, characterized in that the reflected radiation (S) is passed through the multimodal sheath, in particular with an optical cover (6b) between the fibre core (6a) and the sensor (11).
5. Distance meter according to Claim 3, characterized in that the reflected radiation (S) is passed through the active fibre core (6a), in particular with an optical switch between the fibre core and the sensor (11).
6. Distance meter according to any of the preceding Claims, characterized by a second spectral filter component (1), in particular a filter located upstream of the first spectral filter component (4) in the receiving direction and reflecting in the UV range.
7. Distance meter according to any of the preceding Claims, characterized by a narrowband third spectral filter component (7) between first spectral filter component (4) and sensor (11), in particular having a spectral width of less than 1 nm about the wavelength of the emitted radiation (ES).

8. Distance meter according to Claim 7, characterized
in that the third spectral filter component (7) is
an interferometric and/or a spatially periodic
structure, preferably a Fabry-Perot interferometer
or a reflecting grating structure.
9. Distance meter according to any of the preceding
Claims, characterized by at least two spatial
filter components (6, 6'), in particular having a
coordinated multi-lens array (2a'), preferably the
multi-lens array (2a') being formed as a structure
of a ZnSe plate (2').
10. Distance meter according to Claim 9, characterized
in that spatial filter components (6, 6') and
multi-lens array (2a') are fixed by a hexagonal
honeycomb-like structure, in particular comprising
beryllium.